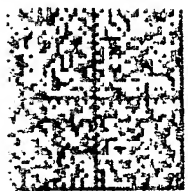


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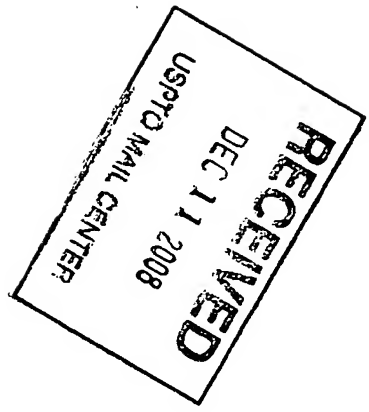


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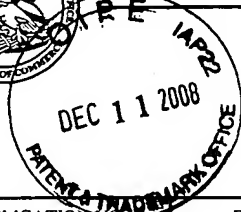




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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------------|---------------------|------------------|
| 10/807,582 | 03/23/2004 | Frederick Mitchell Gallant | 96,172 | 4116 |

7590 12/08/2008
Office of Counsel Code OC4
Naval Surface Warfare Center
Indian Head Division
101 Strauss Ave., Bldg. D-31
Indian Head, MD 20640-5035

EXAMINER

HEITBRINK, JILL LYNNE

ART UNIT PAPER NUMBER

1791

MAIL DATE DELIVERY MODE

12/08/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/807,582 | GALLANT ET AL. | |
| | Examiner | Art Unit | |
| | Jill L. Heitbrink | 1791 | |

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2008.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-10 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-10 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

2. Claim 1 has been amended to indicate that the final material comprises "at least a segment" of the composite material. However, the specification does not have any support for a segment and/or more than one segment in the final material.

3. Claim 10 indicates that the composite material is an intermediate material. However, no intermediate material is disclosed in the original specification.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 states "said final material is a gradient material formed by the screw extruder system" and claim 10 states "the composite material is an intermediate material formed in making the gradient material". These claims are unclear as to what

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the difference is between the final material and the intermediate material, and is unclear as to what the relationship is between these materials.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Muller Pat. No. 4,608,210.

9. Muller discloses a twin screw extruder system (abstract) having material input conditions (col. 3, lines 56-58), operating conditions (col. 3, lines 56-58) and hardware element configurations (col. 3, lines 30-34) which have disturbances introduced therein. The disturbance is a linear ramp since the feeding is steadily increased. The process forms a gradient material since the amount of powder is increased until it is finally held constant. The gradient material being the final material, i.e. the material desired to be produced, in Muller would have been inherent in the process which is controlled to produce the desired product by adjusting the rate of feeds to produce the desired ratio which is disclosed as changing during the process.

10. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Piovoso et al. PCT WO 00/20190.

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11. Piovoso discloses a twin screw extruder system (page 2, line 36) with disturbances (pulses) introduced to the material input (page 2, lines 1 and 2). The product has a change in the ratio of the material as fed to the extruder.

12. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Schneider et al. Pat. No. 3,906,065.

13. Schneider (col. 2, lines 9-53) discloses the product being gradient in color including the disturbance of the material input and the use of twin screw extruder.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller Pat. No. 4,608,210.

16. Muller discloses a twin screw extruder system (abstract) having material input conditions (col. 3, lines 56-58), operating conditions (col. 3, lines 56-58) and hardware element configurations (col. 3, lines 30-34) which have disturbances introduced therein. The disturbance is a linear ramp since the feeding is steadily increased. The process forms a gradient material since the amount of powder is increased until it is finally held constant. The gradient material being the final material, i.e. the material desired to be produced, in Muller would have been obvious to a person of ordinary skill in the art

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since Muller's process produces a gradient material of known ratios during the changing of the feed rates, see col. 3, lines 54-60.

Response to Arguments

17. Applicant's arguments filed March 17, 2008 have been fully considered but they are not persuasive.

18. Applicant's arguments, see page 4, filed March 17, 2008, with respect to 112, first paragraph, have been fully considered and are persuasive. The rejection under 112, first paragraph, has been withdrawn since the hardware element configurations is not claimed as being disturbed.

19. Applicant argues that the final material produced in Muller and Piovoso is not actually a final material since the material is produced during the start up of the operation. However, these gradient materials are produced by the process to have the specific composition during the operation of the process and extruder and will produce the desired product.

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

21.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill L. Heitbrink whose telephone number is (571) 272-1199. The examiner can normally be reached on Monday-Friday 9 am -2 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jill L. Heitbrink/

Jill L. Heitbrink

Application/Control Number: 10/807,582
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Primary Examiner, Art Unit 1791

Primary Examiner
Art Unit 1791

jlh